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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,316	06/05/2001	Louis Jacobus Botha	RONI005/00US	5717

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EXAMINER

HO, CHUONG T

ART UNIT	PAPER NUMBER
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2664

DATE MAILED: 04/22/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/873,316

Applicant(s)

Louis J. Botha

Examiner

Ho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 7,8 6) ☐ Other:

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Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1, 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Sandin et al.

(U.S. Patent No. 5,946,357).

In the claim 1, see figure 4, Sandin et al. discloses a buffer 108 (a memory buffer to store the data) is positioned between the line 58 and the inter deinterleaver 62. The buffer 108 buffers N frames of the demodulated signal formed by the demodulator 56 (shown in figure 1). Data bits of the frames of data bits buffered by the buffer 108 are deinterleaved by the inner deinterleaver 62 and decoded by the decoder 66. In one embodiment, the N-frame buffering can be performed in the inner deinterleaving and a separate device 108 is not necessary. Then, as described previously groups of data bits of the frames of data bits are deinterleaved by the outer deinterleaver 72, and block decoding of groups of the data bits of the frames of data bits is effectuated by the outer decoder 76. The apparatus 80 is further shown to include a control device 114, coupled to the decoders 66 and 76, the deinterleaver 62 and 72, and the buffer 108 by way of the control lines 116 (see col. 10, lines 15-40); comprising:

♦ a memory buffer to store the data (see col. 10, lines 15-40);

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- ◆ coupled to memory buffer, for performing a first and second de-interleaving of the data in memory buffer (see col. 10, lines 15-40).

3. In the claim 6, see figure 4, Sandin et al. discloses a buffer 108 (a memory buffer to store the data) is positioned between the line 58 and the inter deinterleaver 62. The buffer 108 buffers N frames of the demodulated signal formed by the demodulator 56 (shown in figure 1). Data bits of the frames of data bits buffered by the buffer 108 are deinterleaved by the inner deinterleaver 62 and decoded by the decoder 66. In one embodiment, the N-frame buffering can be performed in the inner deinterleaving and a separate device 108 is not necessary. Then, as described previously groups of data bits of the frames of data bits are deinterleaved by the outer deinterleaver 72, and block decoding of groups of the data bits of the frames of data bits is effectuated by the outer decoder 76. The apparatus 80 is further shown to include a control device 114, coupled to the decoders 66 and 76, the deinterleaver 62 and 72, and the buffer 108 by way of the control lines 116 (see col. 10, lines 15-40); comprising:

- ◆ a demodulator coupled to the wireless link (the radio link performance, see col. 3, line 38) (see figure 1, col. 10, lines 15-40);
- ◆ a memory buffer to stored the data (see col. 10, lines 15-40);
- ◆ coupled to memory buffer, for performing a first and second de-interleaving of the data in memory buffer (see col. 10, lines 15-40);
- ◆ a medium access control layer coupled to decoding/demultiplexing unit (see figure 1, col. 10, lines 15-40).

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9, 13, 2-5, 7-8, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandin et al. (U.S. Patent No. 5,946,357) in view of Prasad (U.S. Patent No. 6,185,200 B1).

In the claims 9, 11, 13, see figure 4, Sandin et al. discloses a buffer 108 (a memory buffer to store the data) is positioned between the line 58 and the inter deinterleaver 62. The buffer 108 buffers N frames of the demodulated signal formed by the demodulator 56 (shown in figure 1). Data bits of the frames of data bits buffered by the buffer 108 are deinterleaved by the inner deinterleaver 62 and decoded by the decoder 66. In one embodiment, the N-frame buffering can be performed in the inner deinterleaving and a separate device 108 is not necessary. Then, as described previously groups of data bits of the frames of data bits are deinterleaved by the outer deinterleaver 72, and block decoding of groups of the data bits of the frames of data bits is effectuated by the outer decoder 76. The apparatus 80 is further shown to include a control device 114, coupled to the decoders 66 and 76, the deinterleaver 62 and 72, and the buffer 108 by way of the control lines 116 (see col. 10, lines 15-40); comprising:

- ♦ a memory buffer to store the data (see col. 10, lines 15-40);

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- ◆ coupled to memory buffer, for performing a first and second de-interleaving of the data in memory buffer (see col. 10, lines 15-40).

However, Sandin is silent to disclose a read/ write, couple to memory buffer.

Prasad , see figure 2, discloses address generation unit 200 of Figure 2 can be used to generate symbol buffer address to write decoded data into buffer locations corresponding to the de-interleaved sequence shown in Figure 1. In that case, after the buffer is filled, the de-interleaved data can be read sequentially from the memory for subsequent processing (see col. 6, lines 50-64); comprising:

- ◆ a read/write, coupled to memory buffer.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Sandin's system with the teaching of Prasad to provide a read/write coupled to memory buffer in order to write data to memory buffer and read data from the memory buffer. Therefore, the combined system would have been enable the de-interleaver memory to reduce the power usage.

6. In the claims 2, 10, Prasad discloses second de-interleaving as the data is written to memory buffer and performs first de-interleaving as stored data is read from memory buffer (see col. 6, lines 50-64).

7. In the claim 3, Sandin discloses memory buffer stores the data, and wherein said means performed said first and second de-interleaving as the stored data is read from memory buffer (see col. 10, lines 15-40).

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8. In the claims 4, 7, Sandin discloses the data comprises radio frames, memory buffer comprises a plurality of radio frame blocks, and said means causes radio frames to be stored in radio frame blocks (see col. 10, lines 15-40).

9. In the claims 5, 8, Sandin discloses the data is transmitted over one or more physical channels, wherein each of radio frames comprises a physical channel frame associated with each physical channel, each of radio frame blocks comprises a physical channel block associated with each physical channel, and said means causes said physical channel frames to be stored in said physical channel blocks (see col. 10, lines 15-40).

10. In the claim 12, Sandin discloses reassembling one or more physical channels from the data stored in memory buffer; performing a second removal of discontinuous transmission indication bits from the data stored in memory buffer; demultiplexing the data stored in memory buffer into a plurality of transport channels; and reassembling transport block from the data stored in memory buffer, wherein the data comprises radio frames. (See col. 10, lines 15-40).

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Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong Ho whose telephone number is (703)306-4529. The examiner can normally be reached on Monday-Friday from 9am to 3pm.

12. If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington, Chin, can be reached on (703)305-4633.

Any inquiry of a general nature or relating to the status of this application or proceeding should be direct to the group receptionist whose telephone number is (703) 305-3900.

CH

Date 04-19-03..


WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
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